Token Card



Technical Installation Guide

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Card Swiper Installation Guide – Standard Video Game

Supplied Hardware

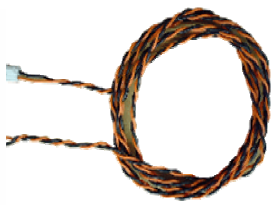
Controller & Swiper (opt.)

(grey/blue)



12v Harness

(orange, black)

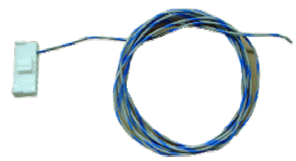


Credit Harness

(red/blue, black)



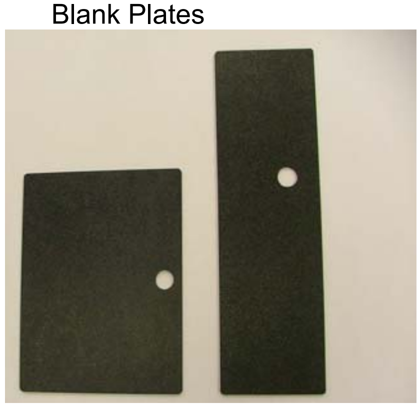
Ticket Harness



Blank Doors



Blank Plates



Patch Cables





Power Supply

Getting Started

1. Unpack all controllers and harnesses from the supplied packaging. Set the Controller DIP switches 1 to 9 to OFF. Set switch 10 to ON.

2. The controller typically gets its 12V DC supply from the games internal power supply, in most cases this is sufficient. In some cases the 12V supply is not good enough and a dedicated linear power supply is recommended. We recommend you test the games internal power supply with a good quality meter to ensure the supply is stable and clean.

3. Turn off the game you are about to install the swiper into and remove the power plug from the wall.

4. The location of the swiper on the machine is usually positioned in the most convenient place for the customer to swipe it, for example a Photo Ride will have the swiper fitted to the top of the dash board. There are also two mounting options of the swiper, either Horizontal or Vertical, please refer to images below for reference. If you are unsure please discuss with your Regional Technician before the installation is started.

5. 



Vertical Mounting

Horizontal Mounting

6. The swipers are supplied and labeled relating to the horizontal or vertical configuration of the LCD, if you have an excess of one type and a shortage of another you can change the LCD configuration by opening the swiper, removing the retaining screws and reversing the LCD bracket. Refit LCD into position and replace retaining screws for LCD bracket and swiper base.

7. Using a swiper base as a template to mark the holes for the mounting of the reader, drill the 4x ¼ inch (6mm) holes and 1x 1/2 (18-20mm) inch hole in the center.

8. Select the type of Card Reader (horizontal or vertical) and install being careful not to pinch any wires when the unit is screwed into position.Check lengths of screws used to fix reader onto machine. Do not extend more than ¼ inch (6mm) inside the housing or damage to the LCD may occur.

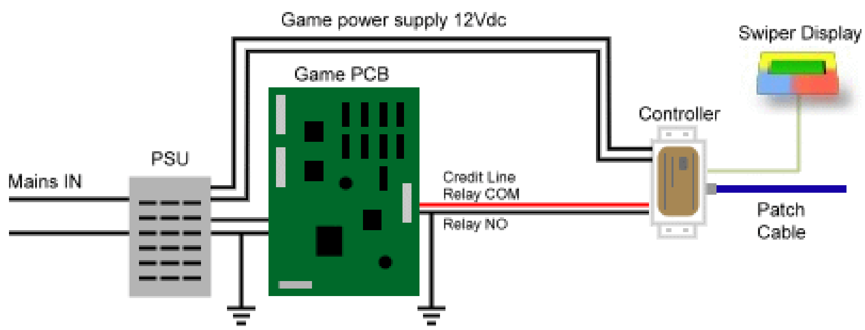


9. Select a suitable position inside the machine to mount the controller. It is recommended that the

controller and harnessing be installed as far away as practical from any sources of EMI, i.e. motors, relays, SCR switches. Connect the swiper cable to J1 and J2 on the Controller.

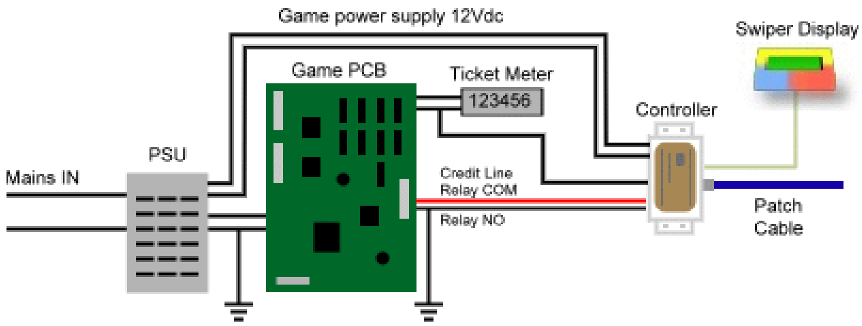
10. Locate a suitable source of 12vDC and test as described earlier. Using the supplied harness connect to the 12v supply and plug into connector J7 on the controller. Where a dedicated power supply is required use the spare JST pins and shells to connect output of the power supply to the controller observing correct polarity of J7. Be sure that if adding power supplies that all grounds are common. Connect the mains AC side of the power supply to the fused or circuit breaker side of mains power in the machine.

11. Locate the CPU board credit input line and ground, this would most commonly be found on the existing Credit Board or Coin Mech. Interface board. Using the supplied credit harness, connect it in parallel with the credit input and CPU ground and connect to the connector J4 on the controller. This will leave the existing coin/token mechanism in working order.

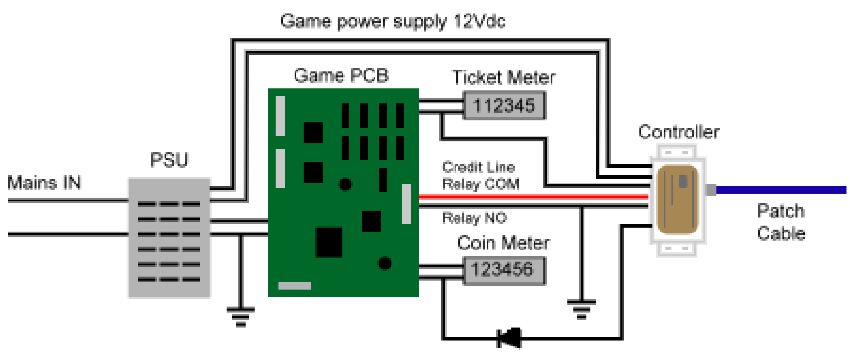


12. If the game you are installing is a redemption game with a paper ticket dispenser and ticket monitoring is required, then using the optional ticket harness connect this to the ticket meter and the other end to connector J3 on the controller.
Please Note - due to a narrow ticket meter pulse on games manufactured by “ICE”, we recommend the optional ticket harness wire is connected to the “Notch” output wire of the ticket

mechanism. This is normally identified as the blue wire in the 4 way Molex connector.



13. If the game you are installing is a coin action game with a paper ticket dispenser meter and a coin-in meter these can be connected for monitoring. Using the optional ticket harness connect this to the pulse side ticket meter (not supply side) and the other end to connector J3 on the controller. With the supplied JST crimp terminal, terminate a GREY/BLUE wire with a IN4004 diode in series (as shown below) and plug into J3-1, connect the other end to the pulse side of the coin meter. Note: swiper display is not required for this game type.

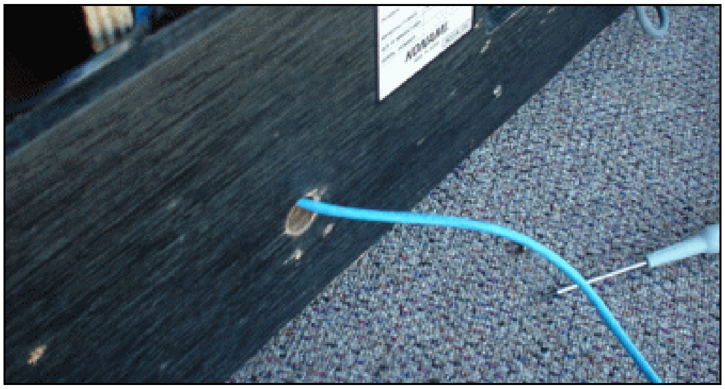




COIN METER **TICKET METER** **CREDIT** **12VDC INPUT**

14. Through an existing opening in the rear of the machine run the RJ45 patch cable through to the controller and plug into position J5. Where no opening exists you will need to drill a

¾ inch hole. The path of the data cable through the machine is important. Take care to avoid placing the cable near any power supplies, transformers or other sources of EMI. It is also preferable where possible to keep the data cable away from the game harnesses.



15. If there are cables running in looms and these looms are separated by connectors any new wire must be inserted into the existing connectors or a new connector fitted. Cable tie all new cables in place in a neat and orderly fashion.

16. Check all your work is as per instructions.

17. Set the Game to "**One Coin – One Play**" through the settings menu or CPU dip switch settings. Refer to the game manual for more information.

18. Plug in and power up machine. The Card Reader should read on its display "Coin1=0 Coin2=0 Tick1=0 Tick2=0". The LCD backlight should be illuminated green.

19. With a small Philips head screw driver adjust the display contrast from the controller for the optimum viewing angle.

20. Testing of the installation can be done as follows (Controller firmware must be v1.45 or later):

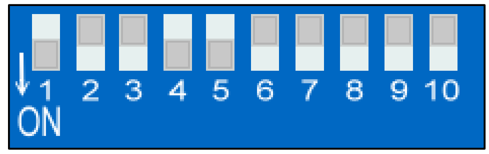
    a) Set DIP switch 10 to ON, all other switches to OFF
    b) Power on Controller. The Swiper display will show
       Coin1= 0 Coin2= 0
       Tick1= 0 Tick2= 0
    c) Swiping any card will issue a credit to the game. This card can typically be of any card with a magstripe – credit card, debit card, loyalty card etc. When the Controller issues a credit to the game the Swiper display will show "Credit Issued" and the Color-glo Swiper will flash green.
    d) Any tickets paid out (from ticket monitoring) will count on the Swiper display and will flash the Color-glo swiper yellow.
    e) Any coins/tokens inserted (from coin monitoring) will count on the Swiper display and will flash the Color-glo swiper blue.

21. Power off the game and set the 'swiper' address on the Controller by positioning the dipswitches as follows.

    We suggest you start addresses from 10 for the first controller, then raise the number sequentially by switching the dip switch combinations to create the number required.

Switch #	1	2	3	4	5	6	7	8	9	10
Value	1	2	4	8	16	32	64	128	**OFF**	**OFF**

e.g. Each switch has a preset value
If the address # required is 25.
Add values 1+8+16=25
Switches corresponding to 1,8 & 16 (1,4&5)
would be switched to the **ON** position.



22. Power up machine. The Card Reader should read on its display “Waiting for Enable” on the top line, the bottom line will indicate the DIP switch address.

23. Record the address number on the available space of the top panel label on the controller. Where possible install controllers in sequential order around the centre for ease of commissioning.

24. If you have a computer with the “Swiper Test Tool” available then connect a data cable and test the communications with a host PC.

25. Record the Controller Number against the game name etc on a spreadsheet for center administration and reconciliation.

Game Name	Address #	Serial Number	Date	Installed By
Super Bikes	32	43098	7/26/06	Gene Cramm

26. Close up machine.

Blank Doors

Over / Under





Over / Under Door Drilled

Over / Under Door Blank





Over / Under Blank Doors Custom drilled to accommodate unique applications.

Dimensions:

Over / Under Door

6 9/16" Width
9 ½" Height

Tri Door

Happ / Entropy



Tri Door with Swiper holes (pre-drilled)



Tri Door blank custom drilled by Technician





Tri Door with Swiper holes (pre-drilled)

Dimensions:

Happ / Entropy Tri-Door

7 9/16” Width
8 7/8 Height

Tri Door

Coin Mechanism





Tri Door Coin Mechanism with Swiper holes (pre-drilled)



Coin Mechanism Tri Door Blank

Coin Mechanism Tri-Door

7.27” Width
9.32” Height

Mid-Width Doors



Mid-Width Door Blank



Mid-width doors with swiper holes (Pre-drilled)

Happ / Entropy Mid-Width door

8.68” Width
9.9” Height
Blank Plates

4” X 7”





4” X 7” Blank plate used in Most Amutec rides and Air Hockey









3" X 4 ¾" Blank Plates used on Most Memo Park and Jolly Roger Rides

Blank Plates





5" X 5" Blank Plate for Big Foot

6" X 9" Blank Plate for Bubble Up





5 ¼" X 9 ¼" Blank Plate used on Most BayTek games and Sketch Book



Custom Doors



Monopoly



Cyclone Jr



Dunk N Alien / Rock N Bowler



Super Shot
Converting the Credit Card Bill Changer to Token Dispenser

Remove components from original front door and save them. You will need the Keypad / Display later. Remove door and replace it with new blank door.

Attach the 3 swipers to the front of the door.

Hook up power to the 3 controllers with 12v 3 amp power supply.

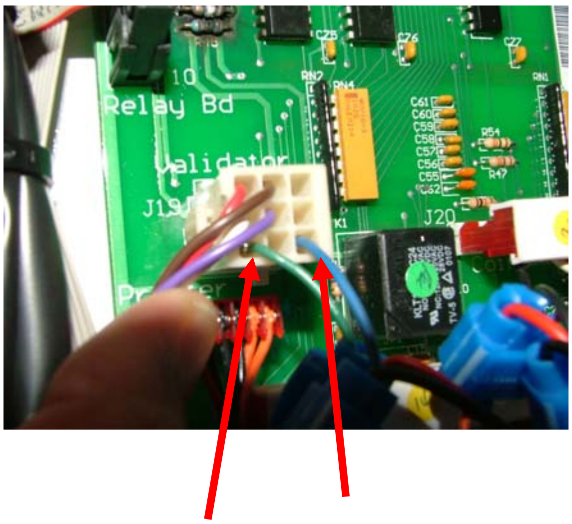
Plug the swipers into their respective controllers; 1 Token bottom left, 10 Token bottom right 20 Tokens top right.

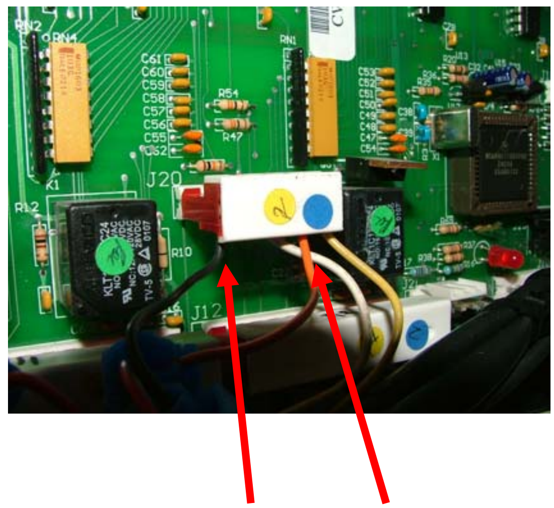




Inside of Token Changer

Secure wiring to door and neatly route wires out of the way of Tokens.





Attach credit wires from 10 & 20 Token swipers here.

Attach credit wires from 1 token Swiper here.

Locate J 19 and J 20 on the CPU board. On connector J 19, you will use pin 3 (bottom left) and pin 9 (bottom right), to tie into your credit wires for the 10 token and 20 token swipers.
On J 20 you will use pins 1 and 5 to tie in to your credit wires for the 1 token swiper.

Once you have each controller wired, you will need to hook up the Keypad / Display and POWER UP the machine. You will need to enter “Set up” mode. From there, select “Tkns”, then select “Bills”. Set the $1 to Dispense 10 Tokens by using the “More” button.
Then select “Next”, set $2 for 20 Tokens. The 1 token swiper should already be set to dispense 1 token if your machine was dispensing 1 token for a quarter prior to the conversion.
Once your values have been modified, you can exit out of programming mode and reset the machine.



Note: Since both the 10 Token and 20 Token controllers use the same credit wires, you will need to set the 20 Token controller to 2 Pulses.

This is done in the Games Maintenance Menu in the control rack.

Next you will want to test the machine to assure it is paying out the proper amount of tokens per swiper. If the management feels that the values of the swipers are too high or low, they may be changed to different amounts. A set of decals will come with the front door for the Token Dispenser.
For instance, you may decide to dispense 1, 4 and 10 Tokens or 1, 5 and 15 tokens.
Keep in mind that the corresponding values need to be set to deduct the proper amount from the card balance for each swiper.
Once you have confirmed that all 3 swipers are paying out correctly you can POWER DOWN the machine and unplug the Keypad / Display and store it for use later.

Make sure, when you test the token Dispenser, to see if the proper balance is being deducted from the card. For example, if a card had 50 tokens on it and you swiped the 20 token swiper once, the card balance should now be 30 tokens. Also verify the number of tokens being dispensed to the guest.

Wire color from left to right
Orange (large)
White / Green
Space
Space
Green
Orange (small) and Black (large)



Electronic Ticket Interface (ETI) User Guide



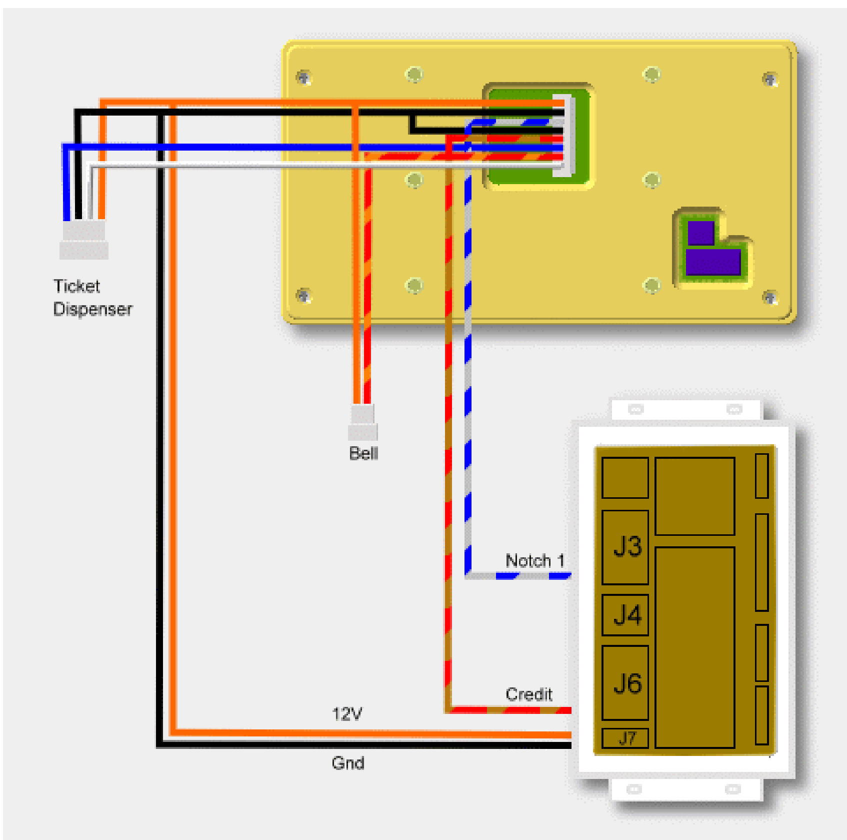
Hardware Version: EzyTick_v2.31.pcb
Firmware Version: Etr_42+
For use with Embed Controller v4.2

August 2006

Quick Connection Guide

ETI Connector Pins:

Wire	Color	Function	Connect To	Description
1	Orange	+12V	Ticket mech connector +12V	Power from Game
2	Black	Gnd	Ticket mech connector Ground	Ground from Game
3	Grey/Blue	Card Notch	Controller Input - IP7 TICKET1	Isolated ticket count
4	Black	Card Ground	Ground	Isolated ticket count ground
5	Red/Brown	Credit	Controller Output – OP1 Credit	Credit from Controller
6	BLUE	GAME NOTCH	Ticket mech connector Ticket Notch	Ticket notch signal returned to game
7	Red/Orange	LAMP	Bell/beacon	Open collector sink for strobe lamp, beacon etc
8	White	DRIVE	Ticket mech connector Drive	Game Ticket drive signal



System Overview

The *Electronic Ticket Interface (ETI)* unit provides a ticket management system designed to work on redemption arcade games, and must be used in conjunction with the *Embed Card System*. The *ETI* unit replaces the mechanical ticket mechanism currently used in all redemption games. Using the *ETI* unit to manage tickets has the advantages of freeing the customer from carrying large numbers of tickets, ensuring 100% accuracy of game ticket payout figures, saving costs associated with paper ticket purchase, freeing staff from ticket related tasks (clearing ticket jams, refilling tickets, ticket counting/reporting).

Tickets that are won while playing any redemption game are recorded electronically in the stores database (the same method used to record other card details). During game play, the number of tickets won is shown on a dot-matrix display on the *ETI* unit. This figure indicates the number of *Electronic Tickets* being added to the card.

Support for token/coin roll games is also catered for. Tickets won by playing the Roll-down game are cached in the *ETI* unit until a card is swiped. Once this card swipe occurs, all cached tickets are sent to the card system and added to the card.

At any time, the customer can check their accumulated *Electronic Ticket* balance by swiping their card at any *Check Balance* station. The balance is updated immediately when the game is being played – there is no delay between tickets being won and being added to the card. The customer can redeem their *Electronic Tickets* for prizes at the cashier counter.

By replacing existing mechanical ticket mechanisms, the *ETI* hardware emulates the signals that would otherwise be produced by the mechanical ticket mech. The hardware also interfaces to the *Embed Card System* controller in order to provide ticket counts to the *Card System*. An additional output has been added for general-purpose attraction displays (eg. rotating beacon, strobe lamp, bell etc) that is activated when tickets are being “dispensed”.

All harnessing is provided and each *ETI* unit has a set of DIP switches which allow for rapid and simple integration into any game.

ETI Harness Connectors

ETI Connector – 8 way JST

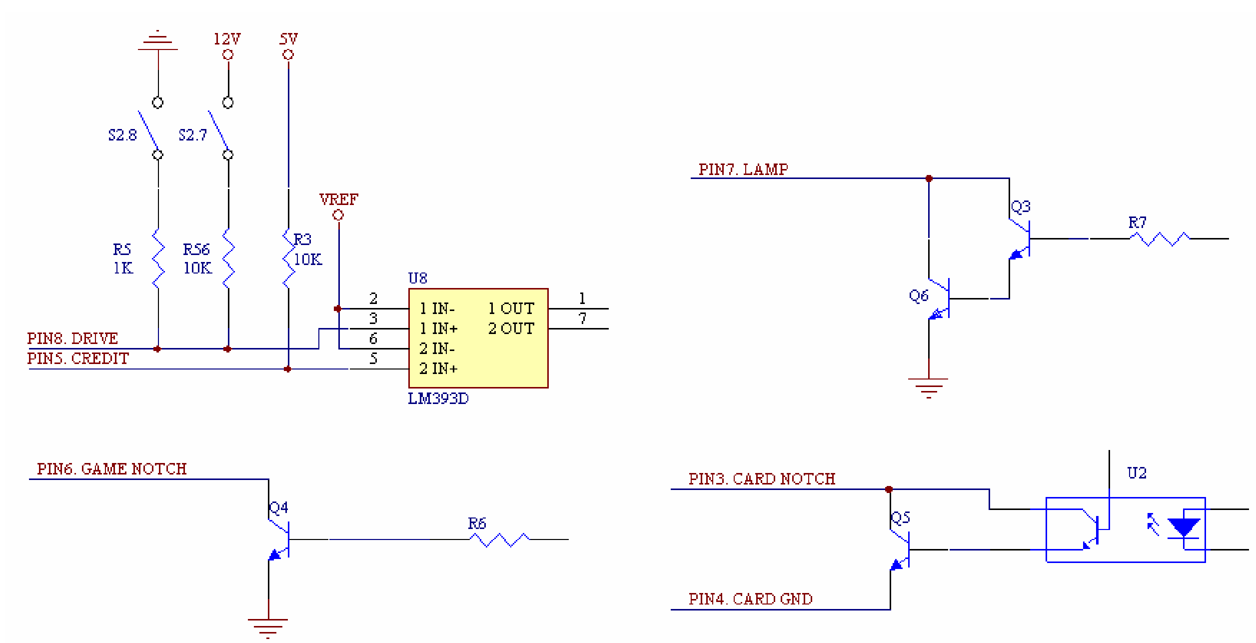
Wire	Color	Function	Description
1	ORANGE	+12V	Power from Game
2	BLACK	GND	Ground from Game
3	GREY/BLUE	CARD NOTCH	Card System ticket count signal
4	BLACK	CARD GND	Card System ticket count ground
5	RED/BROWN	CREDIT	Credit from Controller
6	BLUE	GAME NOTCH	Ticket notch signal returned to game
7	RED/ORANGE	LAMP	Open collector sink for strobe lamp, beacon etc
8	WHITE	DRIVE	Signal from game to enable ticket counting

Ticket Mech Connector – 4 way Molex

Wire	Color	Function	Description
1	BLUE	NOTCH	***Ticket notch signal to game***
2	***BLACK***	GND	Ground from Game
3	WHITE	DRIVE	Drive signal from game
4	ORANGE	+12V	Power from game

Lamp Connector – 2 way Molex

Wire	Color	Function	Description
1	RED/ORANGE	LAMP	Open collector sink for lamp (2A max)
2	ORANGE	+12V	Supply voltage for lamp



DIP Switch Settings – S1 4 way

DIP switch S1 allows for configuring of the *ETI* program. The functions of each switch are shown below.

Switch Number	Description	ON	OFF
S1-1	Drive Signal Polarity	+ve/High Drive	-ve/Low Drive
S1-2	Game Notch Polarity	-ve Notch	+ve Notch
S1-3	Mode	Dumb Mode	Pulse Mode
S1-4	Ratio	Ratio On	Ratio Off

RATIO

The *ETI* unit can “dispense” tickets using either a ratio or direct dispense methods. When the Ratio is Off, a single drive activation will “dispense” a single ticket. The number of notch pulses returned to the game will be the same number of tickets added to the customers card. When the Ratio is On, the number of tickets dispensed can be varied according to the settings of switch S2. The Ratio can be used in either Dumb Mode or Pulse Mode.

MODE

In Dumb Mode, the *ETI* unit will emulate the dumb Deltronics DL1275 type ticket mech. When the drive signal is activated, tickets will be “dispensed” until the drive signal is removed. In Pulse Mode, the *ETI* unit will emulate the LAI FB18 Intelligent ticket mech. The drive signal is in the form of a pulse, with tickets being dispensed after each pulse.

GAME NOTCH POLARITY

The notch pulse returned to the game can be either positive or negative polarity. A positive pulse is defined as the transition 0V→12V*→ 0V. A negative pulse is 12V*→ 0V→ 12V*.

(*NOTE- THE VOLTAGE OF THE NOTCH PULSE IS SET BY THE VOLTAGE ON THE PULLUP RESISTOR – THE GAME NOTCH SIGNAL FROM THE ETI UNIT IS OPEN COLLECTOR)

DRIVE SIGNAL POLARITY

In Dumb mode, a high drive signal means that the drive is active when there is a voltage 5V or greater. A low drive means that the drive signal is active when there is a voltage of 0V.
In Pulse mode, a +ve drive is a positive going pulse: 0V→5V(or greater)→ 0V. A –ve drive pulse is negative going: 5V(or greater)→0V→ 5V(or greater).

DIP Switch Settings – S2 8 way

Switch S2 is used to control DRIVE signal pull up/down resistors and to set any desired ratio.

S2-7 ON – 10K Pull up resistor to 12V is added to the DRIVE input. This is useful for some games that have an open collector drive.

S2-7 OFF – The 10K pull up resistor is removed from the DRIVE input.

S2-8 ON - 1K Pull down resistor to Ground is added to the DRIVE input. This is useful for games where the ETI unit would otherwise count continuously.

S2-8 OFF - The 1K pull down resistor is removed from the DRIVE input.

S2-1 ON - Token Mode is ON

S2-1 OFF - Game Mode is ON

Switches S2-2 to S2-6 set the ratio of Tickets dispensed to Drive signals received. These are only read in Ratio Mode. When in Dumb mode these switches are ignored and can take any value. The following table shows possible ratio settings. The selection of S2-2 to S2-6 all ON is not shown and should not be used. This setting is for factory test purposes only.

As an example, the *ETI* unit replaces a Deltronics DL1275 mech. We want the *ETI* unit to "dispense" 2.5 times more tickets compared to the DL1275. The game is a standard redemption game. The settings used are Tickets = 5, Drive Signal = 2 giving the switch positions

S2-1=OFF – Normal Game Mode

S2-2=ON, S2-3=OFF – 2 Drive signals

S2-4=OFF, S2-5=ON, S2-6=OFF – 5 Tickets

Drive Signals/Pulses	Tickets Dispensed	S2-2	S2-3	S2-4	S2-5	S2-6
1	1	OFF	ON			
2	1	ON	OFF	OFF	ON	ON
3	1	OFF	OFF			
1	2	OFF	ON			
2	2	ON	OFF	ON	OFF	ON
3	2	OFF	OFF			
1	3	OFF	ON			
2	3	ON	OFF	OFF	OFF	ON
3	3	OFF	OFF			
1	4	OFF	ON			
2	4	ON	OFF	ON	ON	OFF
3	4	OFF	OFF			
1	5	OFF	ON			
2	5	ON	OFF	OFF	ON	OFF
3	5	OFF	OFF			
1	6	OFF	ON			
2	6	ON	OFF	ON	OFF	OFF
3	6	OFF	OFF			
1	7	OFF	ON			
2	7	ON	OFF	OFF	OFF	OFF
3	7	OFF	OFF			

ETI Operation

When power is applied to the ETI unit, the initialisation process shows the current settings. This process is described below.

1. Current software version eg “V4.2”
2. Notch Duty “2” “8”. This is an indication of the pulse timing applied to the GAME NOTCH connector. “2” represents the width of the pulse. “8” represents the time between each pulse. This is hard coded and can not be changed by the user.
3. Game type. This shows the result of SW2.1 setting and will be either “TOKEN MODE” or “GAME MODE”.
4. Drive settings. This is set by SW1.1 and will be either “HIGH DRIVE” or “LOW DRIVE”.
5. Notch settings. This is set by SW1.2 and will be either “+ve NOTCH” or “-ve NOTCH”.
6. ETI Mode. This is set by SW1.3 and will be either “DUMB MODE” or “PULSE MODE”.
7. Ratio enable. This is set by SW1.4 and will be either “RATIO ON” or “RATIO OFF”.
   If the Ratio is ON then the following two numbers show the current ratio settings set be SW2.2 to SW2.6. eg “2” “4” means that there will be 4 tickets dispensed after 2 valid drive signals have been received.

Attract Mode Operation

The ETI unit enters Attract Mode after the initialization process has finished. Attract Mode is where the attract text and animations may appear. The ETI unit will remain in this mode until either a Credit or Drive signal is encountered.

Active Mode – (ETI unit operating in GAME MODE)

If a Credit or Drive signal is applied when in Attract Mode, the ETI unit will enter Active Mode and show “0” meaning that zero tickets have been won.

When a valid Drive signal is encountered, the display will count up the desired number of tickets. The Lamp output will be active during the counting. During this count process, tickets are immediately added to the last card swiped through the *Embed Card System Swiper*. The *ETI* unit will periodically scroll the text “Tickets Won”.

If any credit signal is activated when in Active Mode, then the *ETI* display will be reset to 0. Any remaining tickets will still be dispensed. In effect, the Credit signal is used to reset the display to “0” without actually clearing any remaining tickets.

The *ETI* unit will remain in Active mode for approximately 1 minute after the last ticket was dispensed. After this time has elapsed, the *ETI* unit will flash the number of tickets won and exit to Attract Mode.

Active Mode – (ETI Unit operating in TOKEN MODE)

Token mode will allow the *ETI* unit to cache tickets won in its memory and only send them to the *Card System* after a card is swiped through the *Card Swiper*. That is, a card must be swiped in order to claim any tickets won.

When the *ETI* unit received a Drive signal, the display will count up the tickets won. These tickets are cached in the *ETI* unit. The display will periodically scroll “Swipe Card To Claim” prompting the customer to swipe their card. If the customer does not swipe their card within 2 minutes of the last ticket being dispensed, then these tickets will be lost and they cannot be recovered.

When a card is swiped and the Credit signal is activated, then the *ETI* unit will add the number of tickets cached to the card. When all tickets have been added, the *ETI* unit will enter attract mode.

Note that since token games on their own do not require a credit signal to start the game, generally the controller/swiper is connected to the ETI unit only. ie the credit output from the controller only connects to the ETI only, no game credit connections are possible.

Game Installation

Once the unit has been positioned on the game, the harnessing can be connected. In the majority of games the *ETI* unit can be directly plugged in place of the Deltronics DL1275 ticket mech. Other LAI ITD or FB18 Intelligent Ticket Mechs will need their connector changed to a 4-way Molex connector in order to connect the *ETI* unit.

The *ETI* unit is connected to the game according to the following diagrams. The colors indicated are the same as the supplied harness.

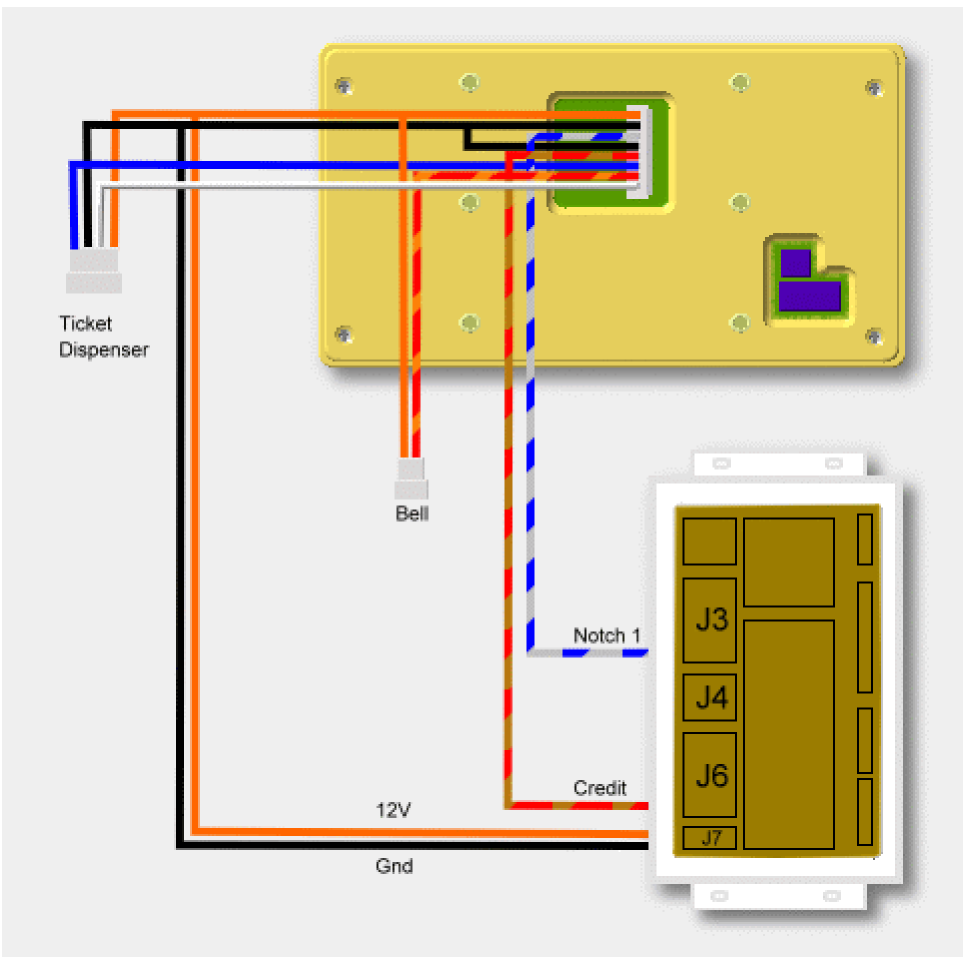
ETI connections to Embed Controller:

GRY/BLU wire – "Card Notch" signal, connects to the IP7 TICKET1 pin of J3

RED/BRN wire – "Credit" signal, connects to the OP1 CREDIT pin of J6

ORG wire – +12VDC power

BLK wire - GND power



Where the existing ticket mech is an intelligent LAI FB18, the game harness needs to be changed to a 4 way Molex as shown below. Check with your game manual before changing connectors.

FB18 Connector Pin	→	ETI Connector (4way Molex)
1. GND	→	2. GND
2. Ticket Enable	→	3. Drive
3. +12V DC	→	4. +12V DC
4. Notch	→	1. Notch

Where the existing ticket mech is an intelligent LAI IDT, the game harness needs to be changed to a 4 way Molex as shown below. Check with your game manual before changing connectors.

ITD Connector Pin	→	ETI Connector (4way Molex)
1. GND	→	2. GND
2. Ticket Enable	→	3. Drive
3. Notch	→	1. Notch
5. +12V DC	→	4. +12V DC

Where the existing ticket mech is a Deltronics DL4 pulse type, the harness may need modifying to a 4 way Molex as shown below. Check with your game manual before changing connectors.

DL4 Pin	→	ETI Connector (4way Molex)
1. V1	→	(not connected)
2. Ticket Meter	→	1. Notch
3. Enable	→	3. Drive
4. Ground	→	(not connected)
5. +12V DC	→	4. +12V DC
6. Ground	→	2. Ground

CHUCK E. CHEESE'S TOKEN CARD TECHNICAL INSTALLATION GUIDE

Date of Origin: August, 2006
Archived: 1-10-13
Submission by ChuckEZone
Version 1.0